

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A liquid crystal device comprising:
 - a first substrate formed with a plurality of pixels on a first planar surface, each pixel having a pixel electrode formed thereon;
 - a second substrate having a second planar surface opposing the first planar surface of the first substrate and separated by a gap normal to the first and second planar surfaces;
 - liquid crystal sandwiched between the first substrate and the second substrate; and
 - a first alignment layer formed between the liquid crystal and the first substrate and a second alignment layer formed between the liquid crystal and the second substrate, the first and second alignment layers aligning the liquid crystal such that there is a clear viewing direction through the liquid crystal and both of the substrates,
the clear viewing direction having a coplanar component and a normal component, the coplanar component being parallel to one of the first and second planar surfaces, the normal component parallel to the gap,
the first substrate and the second substrate transmitting, of light incident from through one of the substrates, light incident from the clear viewing direction in a larger amount greater than light incident from another direction having a component opposite to the coplanar component of the clear viewing direction.
2. (Previously Presented) The liquid crystal device according to claim 1, the one substrate comprising a light-shielding film formed in a matrix that overlaps an area corresponding to an area between adjacent pixel electrodes.
3. (Previously Presented) The liquid crystal device according to claim 1, the first substrate and the second substrate comprising a first opening area and a second opening area for each pixel, and
 - of the first opening area and the second opening area, a center position of the opening area formed in the one substrate being offset toward the clear viewing direction with respect to a center position of the opening area formed in another substrate from which light is emitted.
4. (Previously Presented) The liquid crystal device according to claim 3, the one substrate comprising a microlens so as to oppose each pixel, and

an optical center position of the microlens being arranged so as to substantially coincide with the center position of the opening area of the one substrate.

5. (Previously Presented) The liquid crystal device according to claim 1, the one substrate comprising a microlens so as to oppose each pixel, and

an optical center position of the microlens being offset toward the clear viewing direction with respect to a center position of an opening area of another substrate.

6. (Previously Presented) The liquid crystal device according to claim 5, of the first substrate and the second substrate, the other substrate from which light is emitted comprising a microlens so as to oppose each pixel.

7. (Previously Presented) The liquid crystal device according to claim 6, an optical center position of the microlens formed on the other substrate being offset toward the clear viewing direction with respect to a center position of the opening area of the one substrate.

8. (Previously Presented) The liquid crystal device according to claim 3, the first substrate and the second substrate comprising a first light-shielding film and a second light-shielding film formed in a matrix, respectively, that overlap an area corresponding to an area between adjacent pixel electrodes, the first opening area and the second opening area being partitioned and formed in a matrix for each pixel by the first light-shielding film and the second light-shielding film.

9. (Previously Presented) The liquid crystal device according to claim 8, of the first light-shielding film and the second light-shielding film, the light-shielding film formed on the one substrate broadly overlapping the opening area formed in the other substrate at a side opposite the clear viewing direction compared to a side of the clear viewing direction, of the first opening area and the second opening area, a center position of the opening area formed in the one substrate being offset toward the clear viewing direction with respect to the center position of the opening area formed in the other substrate.

10. (Previously Presented) The liquid crystal device according to claim 8, of the first light-shielding film and the second light-shielding film, the light-shielding film formed on the other substrate broadly overlapping the opening area formed in the one substrate at a side of the clear viewing direction compared to a side opposite the clear viewing direction, of the first opening area and the second opening area, the center position of the opening area formed in the one substrate being offset toward the clear viewing direction with respect to the center position of the opening area formed in the other substrate.

11. (Previously Presented) The liquid crystal device according to claim 1, further comprising an asymmetric microlens, that transmits a larger amount of light incident on the one substrate from the clear viewing direction to the liquid crystal than an amount of light incident on the one substrate from opposite the clear viewing direction, formed in an area of the one substrate opposing each pixel.

12. (Previously Presented) The liquid crystal device according to claim 1, further comprising a high-refractive index layer formed on a side of a light incident surface of the one substrate, a low-refractive index layer formed on a side of a light emitting surface of the one substrate, and a microlens formed in an area of the one substrate opposing each pixel, the low-refractive index layer increasing in thickness from a center of the pixel toward the clear viewing direction and being reduced in thickness toward the opposite of the clear viewing direction.

13. (Previously Presented) The liquid crystal device according to claim 1, further comprising a low-refractive index layer formed on a light incident-side of the one substrate, a high-refractive index layer formed on a light emitting-side of the one substrate, and a microlens formed in an area of the one substrate opposing each pixel, the high-refractive index layer reducing in thickness from a center of the pixel toward the clear viewing direction and increased in thickness toward the opposite of the clear viewing direction.

14. (Previously Presented) The liquid crystal device according to claim 1, further comprising a medium-refractive index layer formed on a light incident-side of the one substrate, a low-refractive index layer formed at a side of the clear viewing direction on a light emitting-side of the substrate, a high-refractive index layer adjacent to the low-reflective index layer at the side opposite the clear viewing direction on the light emitting-side of the substrate, and a microlens formed in an area of the one substrate opposing each pixel, the low-refractive index layer and the high-refractive index layer increasing in thickness from a center of the pixel toward the clear viewing direction and the opposite of the clear viewing direction, respectively.

15. (Previously Presented) The liquid crystal device according to claim 1, further comprising a medium-refractive index layer formed on a light incident-side of the one substrate, a high-refractive index layer formed at a side of the clear viewing direction on a light emitting-side of the substrate, a low-refractive index layer adjacent to the high-reflective index layer at a side opposite the clear viewing direction on the light emitting-side of the substrate, and a microlens formed in an area of the one substrate opposing each pixel, the high-refractive index layer and the low-refractive index layer reducing in thickness from a

center of the pixel toward the clear viewing direction and the opposite of the clear viewing direction, respectively.

16. (Previously Presented) The liquid crystal device according to claim 15, further comprising a non-lens area that allows light perpendicularly incident on the one substrate to travel in a straight line toward the liquid crystal formed on a center of the pixel.

17. (Previously Presented) The liquid crystal device according to claim 16, the one substrate comprising a microlens substrate formed with the microlens, and a thin plate bonded to the microlens substrate via a bonding agent,

the microlens comprising a convex shape having a flat surface that forms the non-lens area in the center of the pixel, and

the microlens substrate and the thin plate being bonded with the thin plate abutted against the flat surface.

18. (Previously Presented) The liquid crystal device according to claim 1, the first substrate comprising a plurality of scanning lines and a plurality of data lines, the scanning lines and the data lines being connected to a pixel switching element, and the pixel switching element being connected to the pixel electrode.

19. (Previously Presented) The liquid crystal device according to claim 1, the one substrate being the second substrate.

20. (Previously Presented) The liquid crystal device according to claim 19, the first substrate comprising a plurality of scanning lines and a plurality of data lines, and the pixel electrode being connected to the scanning lines and the data lines via a pixel switching element, and

the pixel switching element being formed on a side of the clear viewing direction in the pixel with respect to the pixel electrode.

21. (Previously Presented) The liquid crystal device according to claim 19, in each pixel, each of the scanning lines corresponding to the pixel, the liquid crystal device further comprising a capacitor line that forms a storage capacitor formed on the side of the clear viewing direction.

22. (Previously Presented) A projection display device using the liquid crystal device defined by claim 1, comprising:

a light source;

a condenser optical system that guides light emitted from the light source to the liquid crystal; and

an enlarging and projecting optical system that enlarges and projects the light modulated by the liquid crystal device.

23. (Previously Presented) The projection display device according to claim 22, an optical axis of light incident on the liquid crystal device being inclined toward the clear viewing direction with respect to a normal line direction of the liquid crystal device.

24. (Previously Presented) The projection display device according to claim 23, the liquid crystal device being arranged in an oblique position to incline the optical axis of the light incident on the liquid crystal toward the clear viewing direction with respect to the normal line direction of the liquid crystal device.

25. (Previously Presented) The projection display device according to claim 23, a condenser lens used in the condenser optical system being arranged in an oblique position to incline the optical axis of the light incident on the liquid crystal toward the clear viewing direction with respect to the normal line direction of the liquid crystal device.

26. (Previously Presented) The projection display device according to claim 25, further comprising a reflecting mirror used in the condenser optical system arranged in an oblique position to incline the optical axis of the light incident on the liquid crystal toward the clear viewing direction with respect to the normal line direction of the liquid crystal device.

27. (Previously Presented) The projection display device according to claim 23, a plurality of liquid crystal devices being used, and an angle of the optical axis of the incident light inclined with respect to the normal line direction of a liquid crystal device being set to a predetermined value for each of the plurality of liquid crystal devices.

28. (Previously Presented) A liquid crystal device comprising:
a first substrate formed with a plurality of pixels;
a second substrate opposing the first substrate; and
liquid crystal sandwiched between the first substrate and the second substrate, the liquid crystal having an alignment state that produces a clear viewing direction through the liquid crystal,

wherein the first substrate and the second substrate are formed with a first opening area and a second opening area for each pixel, and

wherein, of the first opening area and the second opening area, a center position of the opening area formed in one of the first substrate and the second substrate is offset toward the clear viewing direction with respect to a center position of the opening area formed in another substrate from which light is transmitted.

29. (Currently Amended) A liquid crystal device comprising:

a first substrate formed with a plurality of pixels;
a second substrate opposing the first substrate; and
liquid crystal sandwiched between the first substrate and the second substrate,
the liquid crystal having an alignment state that produces a clear viewing direction through
the liquid crystal;

a first alignment layer formed between the liquid crystal and the first substrate,
and a second alignment layer formed between the liquid crystal and the second substrate, the
first and second alignment layers aligning the liquid crystal into an alignment state that
produces contrast characteristics showing directivity with a higher contrast ratio in a clear
viewing direction than in a direction opposite of the clear viewing direction,

wherein the first substrate and the second substrate are formed with a first
opening area and a second opening area defined by a first unopened area and a second
unopened area, respectively for each pixel, and

wherein, one of the first substrate and the second substrate irradiated with
incident light is formed with a microlens so as to oppose each pixel, and

the microlens refract incident light from the clear viewing direction toward
one of the first and second opening areas, and a part of the incident light from the direction
opposite of the clear viewing direction toward one of the first and second unopened areas.

30. (Currently Amended) A liquid crystal device comprising:

a first substrate formed with a plurality of pixels;
a second substrate opposing the first substrate; and
liquid crystal sandwiched between the first substrate and the second substrate;
and

a first alignment layer formed between the liquid crystal and the first substrate,
and a second alignment layer, formed between the liquid crystal and the second substrate, the
first and second alignment layers aligning the liquid crystal into an alignment state that
produces contrast characteristics showing directivity with a higher contrast ratio in a clear
viewing direction than in a direction opposite of the clear viewing direction,

wherein the first substrate and the second substrate are formed with a first
opening area and a second opening area for each pixel, and

wherein, one of the first substrate and the second substrate irradiated with
incident light is formed with a microlens so as to oppose each pixel, and

an optical center position of the microlens is offset, toward the clear viewing direction ~~with respect to, from~~ a center position of an opening area formed in ~~another~~ substrate from which light is emitted at least one of the first and second substrates.

31. (New) A liquid crystal device comprising:

a first substrate formed with a plurality pixel electrode defining pixels;
a second substrate opposing the first substrate;
liquid crystal sandwiched between the first substrate and the second substrate;
a first alignment layer formed between the liquid crystal and the first substrate
and a second alignment layer formed between the liquid crystal and the second substrate, the
first and second alignment layers aligning the liquid crystal therebetween into an alignment
state that produces contrast characteristics showing directivity with a higher contrast ratio in a
clear viewing direction than in a direction opposite of the clear viewing direction; and
an element that prevents light incident on the first substrate from the opposite
direction from passing through to the second substrate.

32. (New) The liquid crystal device according to claim 28,

wherein for each pixel the first opening area in the first substrate includes a
first center position and the second opening area in the second substrate includes a second
center position,

wherein the clear viewing direction has a viewing direction component
parallel to at least one opening area of the first opening area and the second opening area, the
opposite direction has an opposite direction component being opposite to the viewing
direction component, and

wherein one of the center positions of the first and second opening areas is
offset in the viewing direction component parallel to the opening area toward the clear
viewing direction with respect to the other center position of the opening area formed in the
other substrate through which light is transmitted.

Amendments to the Drawings:

The attached sheets of drawings includes changes to Figs. 6-9, 11-14 and 27-30.

These sheets, which include Figs. 6-9, 11-14 and 27-30, replace the original sheets including Figs 6-9, 11-14 and 27-30.

Attachment: Corrected Sheets: Figs. 6-9, 11-14 and 27-30